

#2

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RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/852,386

DATE: 05/31/2001
 TIME: 17:05:47

Input Set : A:\00133.US1.ST25.txt
 Output Set: C:\CRF3\05312001\I852386.raw

3 <110> APPLICANT: Roberds, Steven L.
 4 Benjamin, Christopher
 5 Karnovsky, Alla M.
 6 Ruble, Cara L.
 8 <120> TITLE OF INVENTION: Human Ion Channels
 10 <130> FILE REFERENCE: 00133.US1
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/852,386
 C--> 12 <141> CURRENT FILING DATE: 2001-05-10
 12 <150> PRIOR APPLICATION NUMBER: 60/203,305
 13 <151> PRIOR FILING DATE: 2000-05-10
 15 <150> PRIOR APPLICATION NUMBER: 60/207,092
 16 <151> PRIOR FILING DATE: 2000-05-25
 18 <150> PRIOR APPLICATION NUMBER: 60/206,526
 19 <151> PRIOR FILING DATE: 2000-05-23
 21 <150> PRIOR APPLICATION NUMBER: 60/207,033
 22 <151> PRIOR FILING DATE: 2000-05-25
 24 <150> PRIOR APPLICATION NUMBER: 60/207,093
 25 <151> PRIOR FILING DATE: 2000-05-25
 27 <150> PRIOR APPLICATION NUMBER: 60/216,893
 28 <151> PRIOR FILING DATE: 2000-07-17
 30 <150> PRIOR APPLICATION NUMBER: 60/237,873
 31 <151> PRIOR FILING DATE: 2000-10-04
 33 <150> PRIOR APPLICATION NUMBER: 60/223,245
 34 <151> PRIOR FILING DATE: 2000-08-04
 36 <160> NUMBER OF SEQ ID NOS: 88
 38 <170> SOFTWARE: PatentIn version 3.0
 40 <210> SEQ ID NO: 1
 41 <211> LENGTH: 630
 42 <212> TYPE: DNA
 43 <213> ORGANISM: Homo sapiens
 45 <400> SEQUENCE: 1
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 50 tggacaatag ttgcgaattt tagagggcct ttgaaatgaa gttctactcc ctaaaagctca 180
 52 taaggtgggg gaatgtacaa acttttaaaa aagtctgtga gttcttttgt cagtagtgc 240
 54 atttctctgc cactctccct ctttttcata tttctcacca gggatggga atattgctcc 300
 56 gagcactgaa ggaggcaaaa tcttttgtat tttatatgcc atctttggaa ttccactctt 360
 58 tggttctta ttggctggaa ttggagacca acttgaaacc atctttggga aaagcattgc 420
 60 aagagtggag aagggtttc gagtgagtac tgtgtcatat ttaaattcta accactgcga 480
 62 tccaattggc tttagcctga caggatccag gaggcagtat cagggcatt gtctgcttt 540
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 72 <213> ORGANISM: Homo sapiens
 74 <400> SEQUENCE: 2

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See p. 5

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75 cacgccgggc aggccaggctg cgggcgggac tggagctggg cgctcacagc	60
77 cctccctc cgtctccctg catagggtac ggccacgccc cgcgggtac ggactccggc	120
79 aaggacttct gcatttcta ggggggggtg ggcattccgc tgacgctggg cactttccag	180
81 agcctgggca gaacggctga acgcgggtgt gcggcgctc ctgttgggg ccaagtgtg	240
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91 <213> ORGANISM: Homo sapiens	
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98 tcgtgccacc agcggcagct ccggagacga gggggccctgc cccaggagag cctgaaggat	180
100 gcggggcagt gtgaggtgga cagcctgccc ggcttggaaagc cttccgtgtat ctacgtcatg	240
102 ctgatccatat gcacagcctc catcctcatc tcttgctgcg ctcagccat gtacaccccc	300
104 attgaaggct ggagctactt tgactcaact tacttctgtt ttgtggctt cagcaccatt	360
106 ggcttgggg acctggtcag cagccagaac gcccactatg agagccaagg cctctatcgc	420
108 ttgc当地 acttcgttcat cctcatgggt gtctgctgca tctactccctt gttcaatgtc	480
110 atctctatcc tcatcaaaca gtccttgaac tggatcttga ggaaaatggc cagcgggtgc	540
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127 aaataactgca gacagttcaa tgatactttt ctgttccaga tctgagttccc cagggagcct	180
129 gttcaagtgt gatccccaaag tccaaagggg tctccaaatc gcttcttgac ccactaacgc	240
131 aatccctctg ccgaaatctt tccctgggtt ggacaaggct atgcacacat agatacaacc	300
133 tccacctcga gggctctcag tgcaggaaag ggtccttagt atggccctgtt cccattccca	360
135 tgtttacccc agactccccca caacctcata caatccttggaa gacttcaag tggactcaga	420
137 gccaactcc ctccctccata ggtactgaa gtcctggcc tggctctgtt cctgaccctg	480
139 gggacgctgg tcattctcat cttccccc atggcttca gccatgttggaa gggctggagc	540
141 ttcaagcgagg gcttctactt tgcttctatc actctcagca ccattggctt tggggactat	600
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154 taagatgtat ataagatggt tgccaggatg tcgcctgtgt ccgtgagaac gaggaacatc	120
156 agggggatc caaagagagc atagagcatg cacaagtact tgccaagcct ggtgacgggg	180
158 tagatgtatc catagcctga aaaagaagat ggagcttaga gtttgcattt gggcccttcc	240
160 ctttttcccc ccaaaagctt taaagagacc ttctgcccattt tcccctccctt ggcattgacat	300
162 tt	302

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/852,386

DATE: 05/31/2001

TIME: 17:05:47

Input Set : A:\00133.US1.ST25.txt

Output Set: C:\CRF3\05312001\I852386.raw

165 <210> SEQ ID NO: 6
 166 <211> LENGTH: 726
 167 <212> TYPE: DNA
 168 <213> ORGANISM: Homo sapiens
 170 <400> SEQUENCE: 6

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173	ggtgacgaag	cagaaagt	agcgagtcc	cgtatccc	gccctccacg	ctggtgtaca	120
175	tggccgaggc	gcagcaggac	agcagcacgg	cgaacaggcc	caggatgagc	agcacgtgg	180
177	acaccgaggg	cttccagccc	gccaggctgt	cggcctccg	gagcgcggag	ccgcggcgga	240
179	aggtgtggcggg	cagcaggccg	ctgcggcgca	gctggcgctc	ccggcaggcg	cgcattatg	300
181	aggccagcag	cgagatgatg	cgctccagga	agaggttga	gaacaggatg	gtcccagcgc	360
183	agccgaacag	cccgtaggcg	atgaggaagg	ccttccg	caccgtcg	gggggtggta	420
185	tgccgaaacc	tgtggagaca	gggcagggtc	agcgcgtcc	tggccgc	gtgtgtcc	480
187	actgggcgag	ggtgggggt	gtggggcgg	gggcattgc	gtgctgc	ggctcctatc	540
189	tcgagtggca	ccactcaggt	ggaggaagaa	cagcacttag	tcatttatct	cccttgg	600
191	cacttaatat	gtttcctgat	cttggcagcc	cctaaactga	tggaggagac	atggcccttc	660
193	atcttgggga	cctataaacc	caagtgg	ggacaggt	tcactaggaa	ggaccatca	720
195	tgacac						726
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201	<213>	ORGANISM:	Homo sapiens				
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208	gatcgcaaga	gtcctctctg	gcattgcgg	cagcacccgc	tgtccat	cctcaggatc	180
210	cagttcaagg	actgtttgat	gaggatag	atgacattg	acaaggagta	gatgcagcag	240
212	acacccatga	ggatgaagac	aaagtggca	aagcgataga	ggc	ctcatagtg	300
214	gcgttctggc	tgctgaccag	gtccccaa	ccaatgg	tgaaagccac	aaaacagaag	360
216	tagatgt	caaagt	ccagc	atgggggt	acatgg	ggcgcagcaa	420
218	gagatgagga	tggaggctgt	gcataggatc	agcatgac	agtacacgg	gggttcc	480
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233	gtactcactc	gaaacac	ctccactt	gcaatgc	tccca	ggttca	180
235	tgg	tccaa	ttccagccaa	taagaa	ttccaa	ggcatata	240
237	atacaaaa	tttgc	ttcagtgc	ggagcaat	tcc	tgg	300
239	tataaaaa	agggag	gcagaga	at	acc	tcacaga	360
241	ttttaaa	ttgtacattc	ccccac	ttag	ggat	ttcatt	420
243	aggcc	c	caat	cg	aa		442
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Input Set : A:\00133.US1.ST25.txt
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251 <400> SEQUENCE: 9
252 agcaggcagc cgatcagcag gaaaagcatc gccgacagca ctcttactag ctccgggtggc 60
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256 ctcccatact ccccaactccc gccccagga gcctgtggga gaggcttatg gtctttgggg 180
258 gcgcgctcat gtgccaggga catggggaa ggtagccgga gcccagcaca agggcaggca 240
260 gggcatggag cagctcacca agaagatggc ttcaatgtga ccgatgccat ggcgcaggga 300
262 ggagcccagc cggtccccga cccctgccag taggatccca aacagcgaa tccccaccag 360
264 cgcataaaaag atgcagaaga ggcgcggc atctgtgcgc agggccacat tgccatagcc 420
266 tgggcagagg ggcgatgcag gaagtctagg ggcacactgg gaccctccg tctcccttgc 480
268 accttcccccc atgaggaagc tccttgccgc ccccacatg ccaatccct ccccccaccca 540
270 tggtgtgtat gatggtccct gagaaaaaaga aggctgccc caggtcccaa gctgagtggc 600
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275 <210> SEQ ID NO: 10
276 <211> LENGTH: 564
277 <212> TYPE: DNA
278 <213> ORGANISM: Homo sapiens
280 <400> SEQUENCE: 10
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283 tccagggaat cagcagtctc ttcatgtttaaaaatgggt gcgtctctta cgactgggccc 120
285 gtgtggctag gaaactggac cattaccttag aatatggagc agcagtctc gtgtccttgg 180
287 tgtgtgtgtt tggactgggt gcccactggc tggctgcat atggatatgc atcggagact 240
289 acgaggtcat tgatgaagtc actaacacca tccaaataga cagttggctc taccagctgg 300
291 ctttgagcat tggactcca tatcgctaca ataccagtgc tggatataatgg gaaggaggac 360
293 ccagcaaga ttcattgtac gtgtcctctc tctactttac catgacaagc ctacaaacca 420
295 taggatttgg aaacatagct cctaccacag atgtggagaa gatgttttgc gtggctatga 480
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299 cctggctaca atctcagataa ggat 564
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304 <212> TYPE: DNA
305 <213> ORGANISM: Homo sapiens
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312 accagtgtca gcgggatgcc cagcacggcg tagaacatgc agaaggcctt gcccgcattcg 180
314 gtgccagggt cagcgtgccc ataacctgtg ggaaggggat gagaagaaca gagagagcaa 240
316 gtgaggagggt gtctagaggt tgggggaagg gagggtcgac ttgggtcagt gcagtgcatt 300
318 gcagaggagc ctggacttgg gggatttcc tctgcagggt agaggggcgt ggccatatat 360
320 tggagggagg agaacaagg agagccactt tctcagaagt cacatgaggt tagggatgg 420
322 caggggggtt ggaacatttc agtagggagg gagttggat gtgctggat ggaagggaaag 480
324 agaaaaagaa gaacaaatgt cacttgcaat atgccactga gagggatgg aggaacattc 540
326 caatgccatc ttaaagccac ataaaggctt taaaaagaaa aaagcagatt cactactaag 600
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330 tgaaaaagtgg atttcaaag aatgataact 690
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334 <211> LENGTH: 643
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336 <213> ORGANISM: Homo sapiens
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RAW SEQUENCE LISTING
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Input Set : A:\00133.US1.ST25.txt
Output Set: C:\CRF3\05312001\I852386.raw

339 gcagttgcag tgtgttctgt ttctcttagcg catgagatct ctc当地
341 agcttggcg tgaaggacat gtgc当地 aagctctca gcactgatga
343 tcatctgagg gacagctca tctgc当地 tttttctt当地 aagagagatt
345 tggggcacca cttggagagg aaaaaaaaaaaa aaaaaggaaagg gaattt当地 aaccgattat
347 aagatgtaga taagatggtt gccaggatgt cgc当地 cgtgagaacg aggaacatca
349 gggggatacc aaagagagca tagagcatgc acaagtaactt gccaagc当地 gtgac当地
351 agatgtagcc atagc当地 aaagaagatg gagcttagag tttgcatctg gccc当地
353 ttttccccca caaaagctt aaagagaccc tctgccatct cccctc当地 gcatgacatt
355 ttacacattt tttt当地 tactcatctc aaagc当地 gccaactglocal tggattt当地
357 ctgc当地 tggagggaa aggagt当地 cagctccct ttaggataag gagcaactg
359 tatccaggc当地 tttgattt当地 aatgtc当地 gcaggggacc agc
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364 <212> TYPE: DNA
365 <213> ORGANISM: Homo sapiens
367 <400> SEQUENCE: 13
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372 gactccagg cc当地 ctc当地 ttaaagatg
374 acaatgc当地 cggccaaagat
376 acttgc当地 tctt当地
378 attcaggata tagatgcaca
380 tcattggctg cttggagggaa
382 tc当地
384 caggtcaaaac
386 ccatgactgc
388 caaaaatgct
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392 <211> LENGTH: 551
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396 <400> SEQUENCE: 14
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399 caaacctc当地
401 cacacgcccc
403 ggtt当地
405 cctggccaca
407 ggc当地
409 tggattt当地
411 tgcc
413 gcatgctcta
415 g
418 <210> SEQ ID NO: 15
419 <211> LENGTH: 574
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635

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/852,386

DATE: 05/31/2001

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Input Set : A:\00133.US1.ST25.txt
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L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:1356 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45
L:1359 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45
L:1456 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49
L:1459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49